2014 NCPERS Public Retirement Systems Study

November 2014

Study conducted by the

National Conference on Public Employee Retirement Systems and

Cobalt Community Research

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This study
reviews funds'
current fiscal
condition and
steps they are
taking to ensure
fiscal and
operational
integrity

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Overview

Public funds are becoming more and more confident addressing retirement trends and issues over the next two years through lower administrative expenses, active administration, solid investment returns and adjusting benefits

About Cobalt Community Research

Cobalt Community Research is a nonprofit research coalition created to help governments, local schools and other nonprofit organizations measure, benchmark and manage their efforts through high-quality affordable surveys, focus groups and facilitated meetings. Cobalt is headquartered in Lansing, Michigan.

Executive Summary

In September and October 2014, the National Conference on Public Employee Retirement Systems (NCPERS) undertook a comprehensive study exploring retirement practices of the public sector. In partnership with Cobalt Community Research, NCPERS has collected and analyzed the most current data available on member funds' fiscal condition and steps they are taking to ensure fiscal and operational integrity.

The 2014 NCPERS Public Employee Retirement Systems Study includes responses from 187 state, local and provincial government pension funds with a total number of active and retired memberships surpassing 11.8 million and assets exceeding \$1.8 trillion. The majority – 81 percent – were local pension funds, while 19 percent were state pension funds.

The study finds that public funds continue to respond to changes in the economic, political and social landscape by adopting substantial organizational and operational changes to ensure long-term sustainability for their stakeholders. Efforts include limiting the number of retiree health benefits, increasing member contribution rates, reducing wage inflation, expanding operational benchmarking and more diligent oversight.

NCPERS is the largest trade association for public sector pension funds, representing more than 550 funds throughout the United States and Canada. It is a unique nonprofit network of public trustees, administrators, public officials and investment professionals who collectively manage nearly \$3 trillion in pension assets. Founded in 1941, NCPERS has been the principal trade association working to promote and protect pensions by focusing on advocacy, research and education for the benefit of public sector pension stakeholders.

Overview - Continued

2014 Key Findings

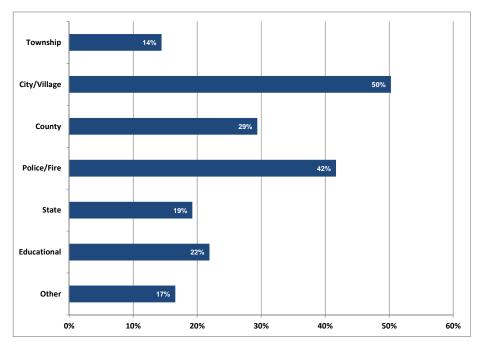
- 1. Public funds are becoming more confident of their readiness to address retirement trends and issues over the next two years. Respondents' overall confidence rating increased to 7.9 on a 10-point scale (very satisfied =10) compared with the 2013 score of 7.8 and a 2011 score of 7.4.
- 2. Public funds are becoming more cost effective. The average administrative expense for respondents to administer their fund is 14 basis points (100 basis points equals 1 percentage point). This is decrease from 16 basis points in 2013. However, investment manager expenses increased from 42 to 47 basis points. The total cost of administering the fund and paying investment managers increased from 57 basis points to 61. According to the 2014 Investment Company Fact Book, the average expenses of most equity funds average 74 basis points and hybrid funds average 80 basis points. This means public retirement funds with lower expenses provide a higher level of benefit to members and produce a higher economic impact for the communities those members live in than most mutual funds.
- 3. Funds continue to tighten benefits, assumptions and governance. Examples include a continued trend increasing member contribution rates, lowering inflation assumptions, shortening amortization periods, holding actuarial assumed rates of return and lowering the number of retirees receiving health care benefits.
- 4. Funds are currently experiencing healthy 1-year, 3-year, 5-year and 20-year returns. 10-year returns are reported at 7.6 percent. Respondents' continue to work toward offsetting sharp losses from 2008 and 2009 by strengthening investment discipline. Signs point to long-term improvement in public retirement systems' funded status.
- 5. Funds experienced an increase in average funded level. Responding funds report an average funded level of 71.5 percent, up from 70.5 percent in 2013. Two factors contributed to the change. First, on average funds saw 1-year investment returns of 15 percent. Second, funds continue to lower amortization periods.
- 6. Income used to fund pension programs generally comes from three sources: member contributions, employer contributions and investment returns. Investment returns are the most significant source (73 percent). Member contributions make up 8 percent of fund income. Employer contributions equal about 19 percent.

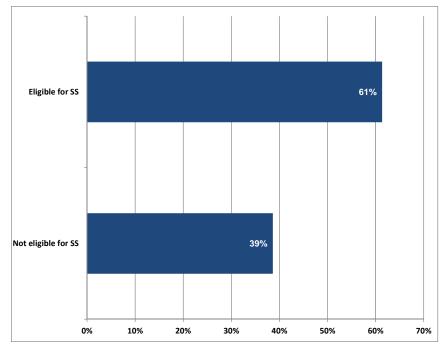
Who Responded

For the 2014 study, 187 respondents provided feedback to NCPERS using the most recently available data.

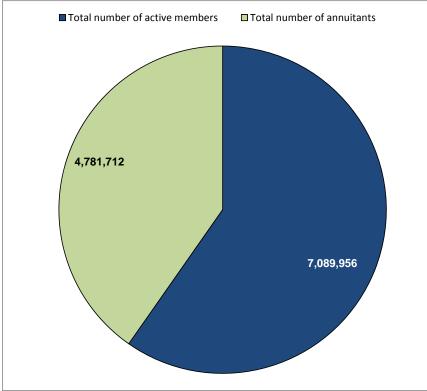
61 percent of responding funds are members of NCPERS. 50 percent serve city and village jurisdictions. About 40 percent of the responding funds serve police and fire employees. The graph to the right shows the 2014 distribution of jurisdictions that the funds serve (totals may exceed 100 percent because of multiple response).

The overall distribution of responding funds is similar to 2011, 2012 and 2013; however, there was a 6 percent increase in the number funds serving educational entities.





About 61 percent of responding funds have members who are eligible for Social Security; and 39 percent are not eligible. In this report, breakdowns are presented for "Eligible for Social Security" and for "Not Eligible for Social Security."



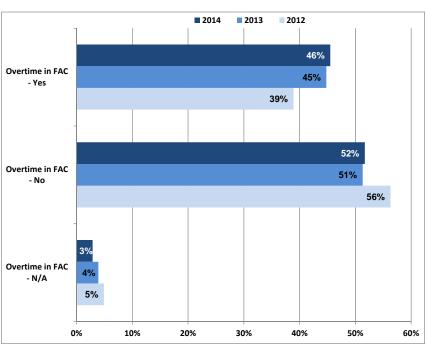
The graph to the left shows the number of active members and retiree/beneficiaries represented by these funds. This totals approximately 12,000,000 covered lives. The ratio is 1.5 actives per retiree. This ratio is consistent with the 2011, 2012 and 2013 findings.

Inclusion of Overtime in Benefit Calculation

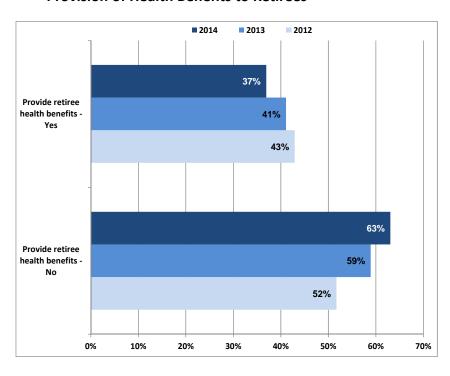
Two areas of interest in public retirement are the inclusion of overtime in the calculation of a retirement benefit and also the provision of health care benefits to retirees.

According to the 2014 study respondents, 46 percent include overtime in the benefit calculation. A modest increase compared to last year.

About 37 percent provide some level of health coverage for retirees, which is slightly lower than last year's study.



Provision of Health Benefits to Retirees



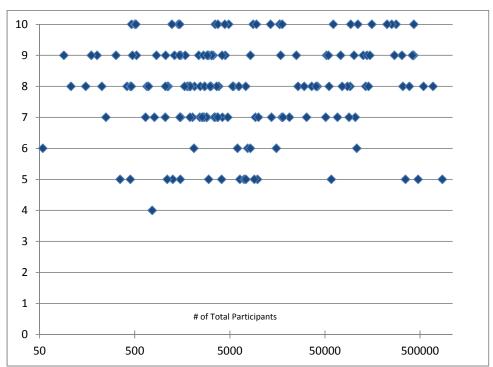
Fund Confidence

The study asked respondents "How satisfied are you with your readiness to address retirement trends and issues over the next two years?" Overall, respondents provided an overall "confidence" rating of 7.9 on a 10-point scale (very satisfied =10). This was up from 7.8 in 2013 and a 7.4 in 2011.

The increases over the last 3 years show retirement systems across the country and becoming more cognizant and confident in their abilities to address concerns in an increasing volatile environment.

Social Security eligible and non-eligible funds rated this question 7.8 and 8.0 respectively.

Fund Confidence

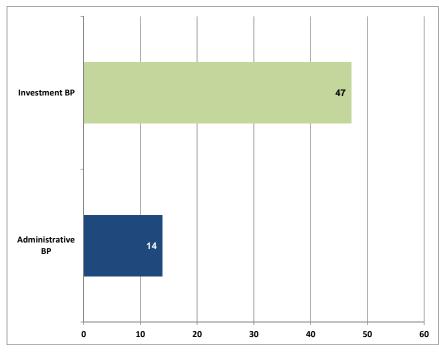


Expenses

The overall average expense for respondents to administer the funds and to pay investment manager fees is 61.1 basis points (100 basis points equals 1 percentage point). This is a slight increase from the 2013 level of 57.3.

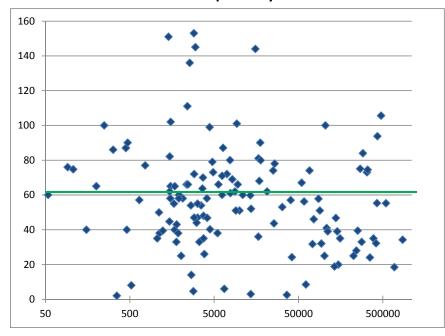
According to the 2014
Investment Company Fact
Book, the average expenses of
most equity funds average 74
basis points and hybrid funds
average 80 basis points. This
means that funds with lower
expenses provide a higher level
of benefit to members (and
produce a higher economic
impact for the communities
those members live in) than
most mutual funds.

2014 Study Plan Expenses (Basis Points)



The graph in the bottom right corner shows the distribution of total expenses (in basis points) on the vertical axis and the size of the fund (by total participants) on the horizontal axis. The green line denotes the average expense.

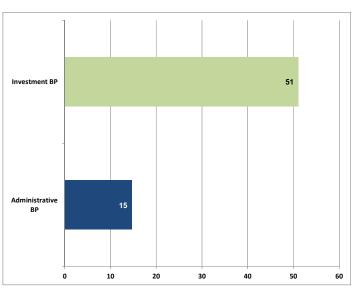
2014 Plan Expense by Fund Size

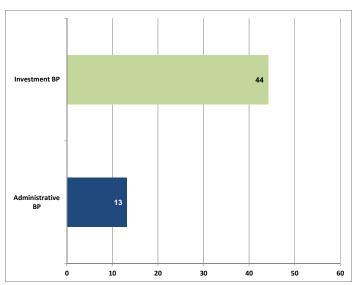


Below are expenses separated by type of fund and size of fund. Fund size is based on if the fund has more than or fewer than 10,000 participants.

Plan Expenses: Not Social Security Eligible

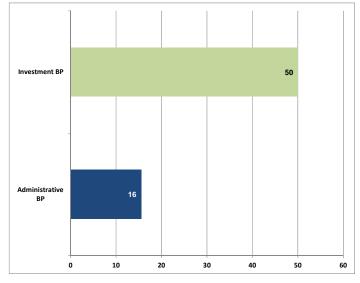
Plan Expenses: Social Security Eligible

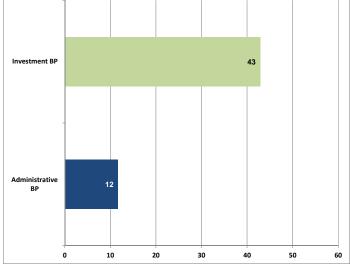




Plan Expenses: Smaller Plans (<10,000 participants)

Plan Expenses: Larger Plans (>10,000 participants)



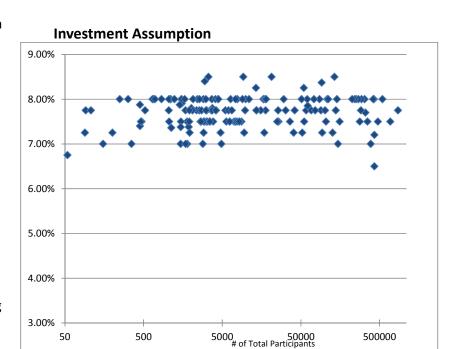


Assumptions

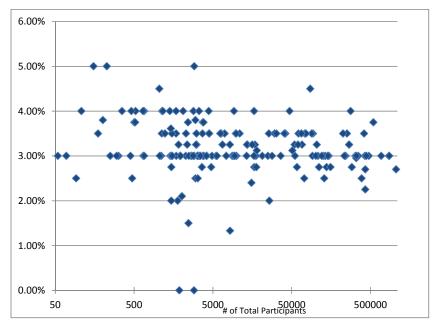
Retirement funds often utilize a long-term planning horizon to ensure liabilities are fully funded at the time the liability is due to be paid. To help a fund set contribution rates and measure progress toward meeting its financial obligations, funds make actuarial assumptions to estimate what investment and demographic experience is likely to be over that time horizon.

Such assumptions have powerful effects on the funding level of a plan and what the required contributions will be to pay for future benefits. Assumptions that are overly optimistic (high market returns, lower-than-expected retirement rates) tend to increase a plan's funded level and reduce the contribution rates an employer is obligated to pay today. Conversely, overly pessimistic assumptions reduce the funded level and increase short-term contribution rates.

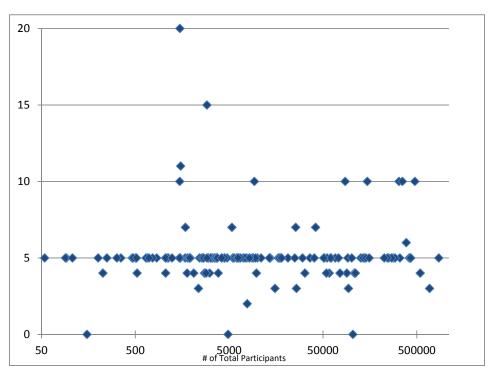
The average investment assumption for responding funds is 7.7 percent, up 0.1 percent from 2013. The inflation assumption fell to 3.2 percent from 3.3 percent in 2013. These are not significant changes.



Inflation Assumption



Investment Smoothing



The investment smoothing period is a key factor in calculating the assets currently held by the fund and the contribution levels required to continue moving toward full funding over the amortization period. By smoothing investments, funds are able to dampen sharp changes in short-term investment returns and thus contribution levels. This helps keep contribution levels more stable over time without undermining the longterm integrity of the funding mechanism.

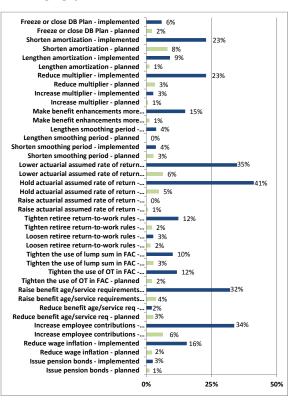
The average investment smoothing period for respondents is 5.2 years, down from 5.7 years in 2013. For Social Security eligible funds, the smoothing period averages 5.3 years, down from 5.5 years last year. Non Social Security eligible plans have an average smoothing period of 4.9 years.

Trends in Plan Changes

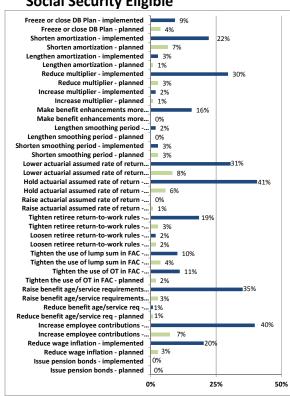
Implemented Planned

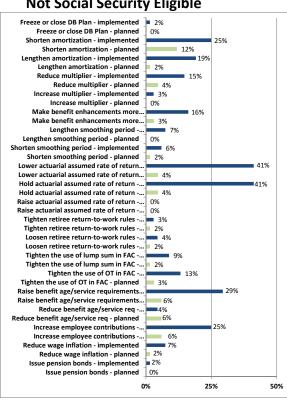
As changes emerge in the political, economic and demographic landscape, funds are adapting their design and assumptions to respond and to maintain the sustainability of the plans. Several areas that showed increased activity over the 2013 study include: shortening amortization period (8 percent increase) and holding actuarial assumed rate of return (4 percent increase.)

Overall



Social Security Eligible



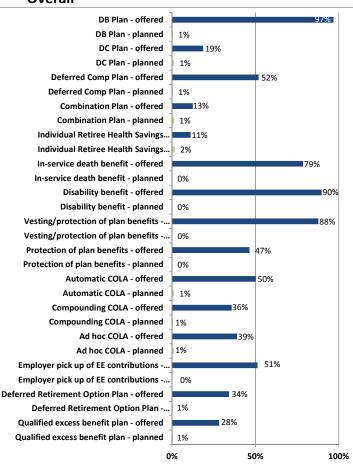


Trends in Retirement Benefits

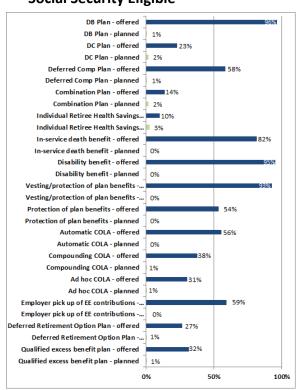
Offered Planned

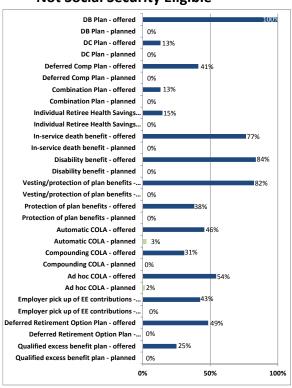
Areas with significant increase compared with the 2013 study include: offering a Deferred Retirement Option Plan (6 percent increase), offering an employer pick up of employee contributions (4 percent increase), and offering an Ad hoc COLA (3 percent increase.)

Overall



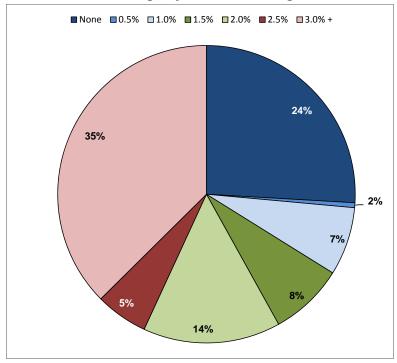
Social Security Eligible





Cost of Living Adjustments

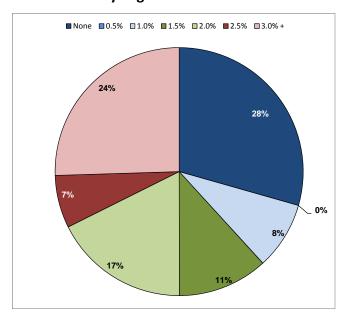
Overall Cost of Living Adjustment Offerings

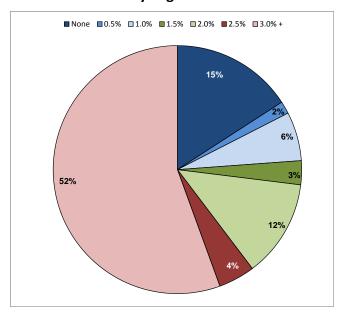


The chart at the left shows the proportion of funds offering various percentages of cost of living adjustments (COLA.) The majority of responding funds offer a COLA of 3 percent or higher. An additional 24 percent do not offer any COLA.

Funds with members who are not eligible for Social Security offer significantly higher cost of living adjustments.

Social Security Eligible



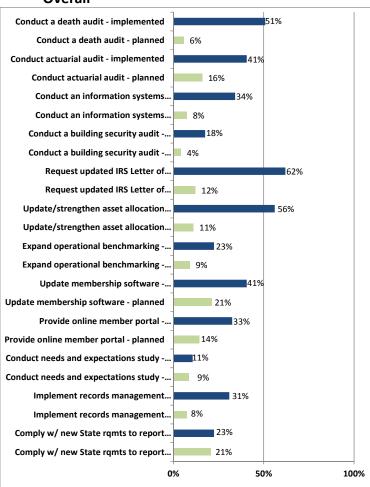


Trends in Business Practices

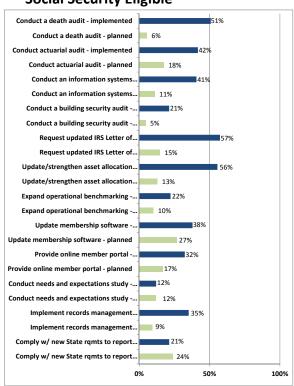
Implemented Planned

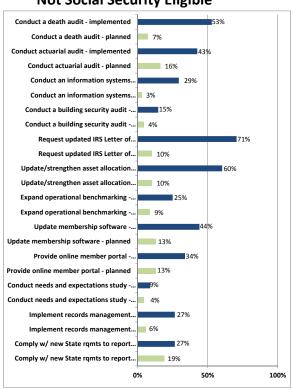
Several areas that showed increased activity over the 2013 study include: 13 percent increase in funds requesting an updated IRS Letter of Determination, and a 5 percent increase in complying with new State requirements to report funded status using a different assumed rate of return.

Overall



Social Security Eligible



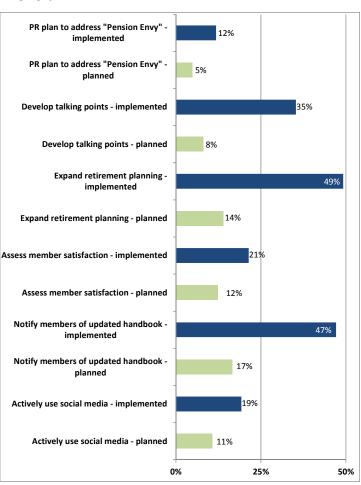


Trends in Engagement

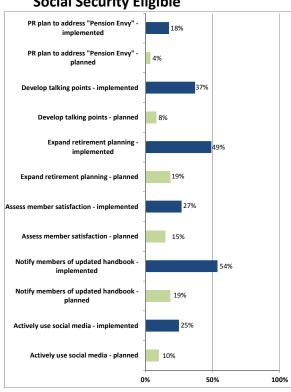
Implemented Planned

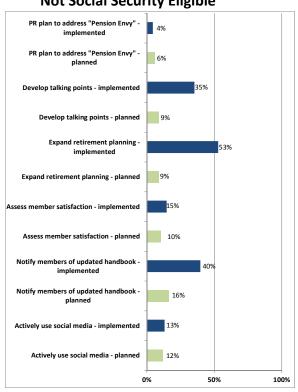
Areas with significant increase compared with the 2013 study include: planning to assess member satisfaction (4 percent increase) and developing staff talking points (3 percent increase.)

Overall



Social Security Eligible



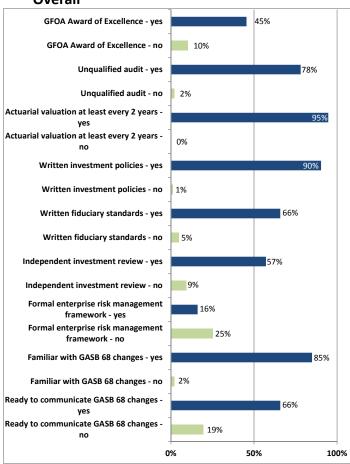


Trends in Oversight **Practices**

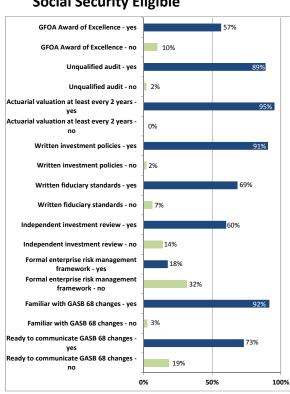
Areas with significant increase compared with the 2013 study include conducting an Actuarial Valuation every two years (3 percent increase).

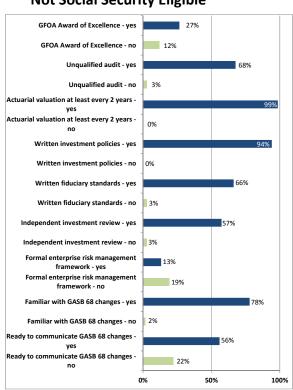
Newly tracked for 2014 is the familiarity with GASB 68 changes (85 percent are familiar) and their fund's readiness to communicate those changes with their governing board and community (66 percent are ready communicate).

Overall



Social Security Eligible





Investment Returns

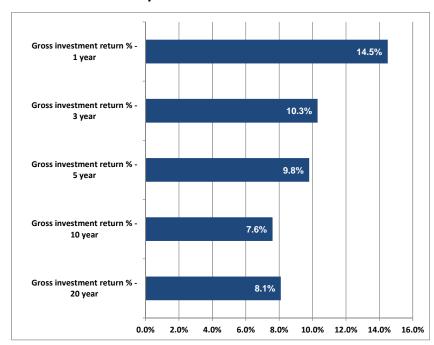
Reporting funds saw, on average, 1-year returns almost exceeding 15 percent. 3-year and 5-year average returns hovered around 10 percent.

The 20-year returns reported by participating funds point to continuing long-term improvement in funded status.

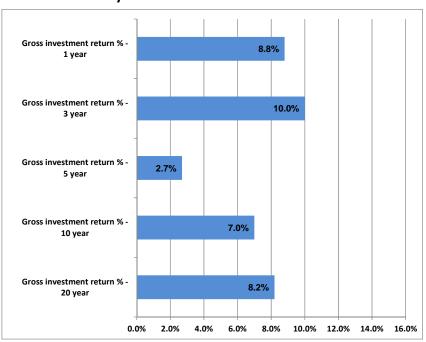
It is important to note not all responding funds have the same fiscal year end date. The timing of when a fiscal year ended accounts for significant difference in investment experience between funds.

The graphs at the right show average reported returns.

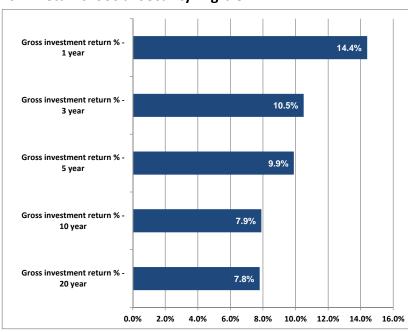
2014 Study Investment Returns



2013 Study Investment Returns

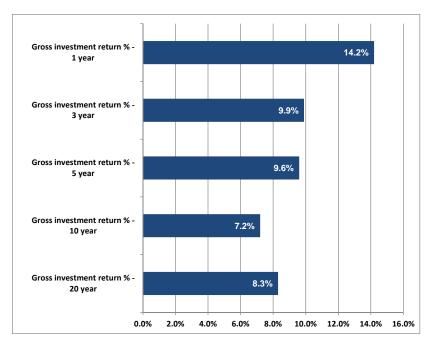


2014 Returns: Social Security Eligible



Funds with members who are Social Security eligible reported slightly higher returns than non Social Security eligible funds.

2014 Returns: Not Social Security Eligible



Investment Asset Allocation

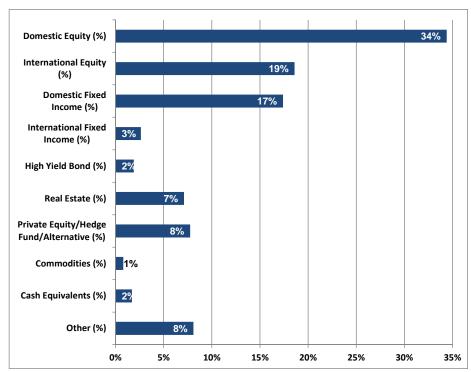
2014 <u>Current</u> Investment Asset Allocation

Overall, funds reported domestic equity exposure at 34 percent (down from 35 percent in 2013) and international equity exposure increased to 19 percent. Funds reduced their exposure to domestic fixed income by 5 percent, and international fixed income by 1 percent.

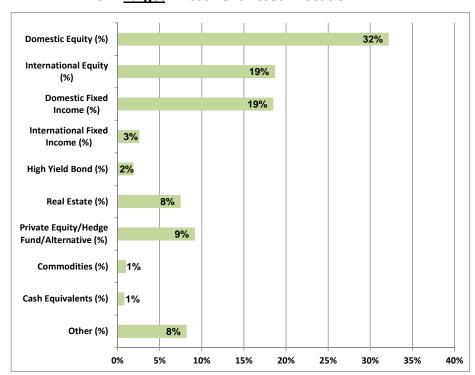
Real estate, private equity, hedge and alternatives stayed consistent at 7 and 8 percent.

"Other investments" saw a 3 percent increase in exposure. (See Appendix A for the openended response to "other.")

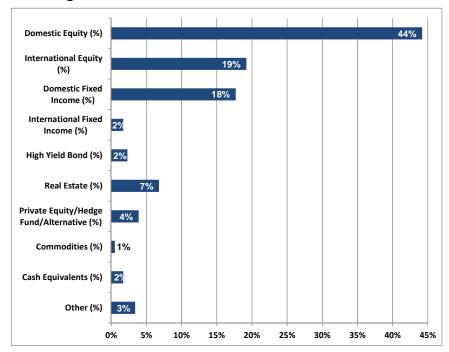
Over the next few years, responding pension funds plan to continue to reduce exposure to domestic equity, and increase exposure to domestic fixed income, real estate and private equity/hedge funds.



2014 Target Investment Asset Allocation



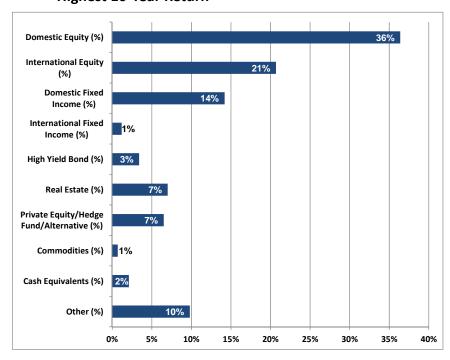
Highest 1-Year Return



On the left are two graphs that show the asset allocations for 20 funds who reported the highest 1-year and the highest 10-year investment returns.

Funds with the highest 1-year return had a significantly higher allocation to domestic equity and lower exposure to private equity/hedge funds/alternatives.

Highest 10-Year Return

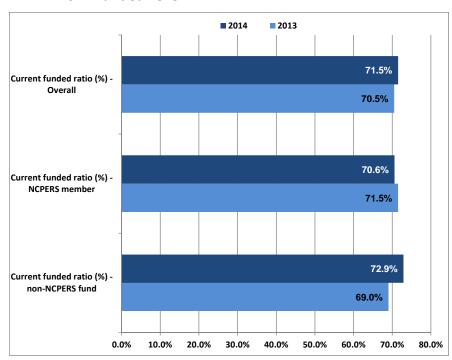


Funds with the highest 10-year returns have slightly higher allocations to domestic and international equity and other investments with lower allocations to domestic fixed income and private equity/hedge funds/alternatives.

Funding Levels

Based on responses to the 2014 study, average funded level is a solid 71.5 percent (top right), slightly above the 70.5 percent in the 2013 study. The most significant reason for this increase were strong market returns in 2013.

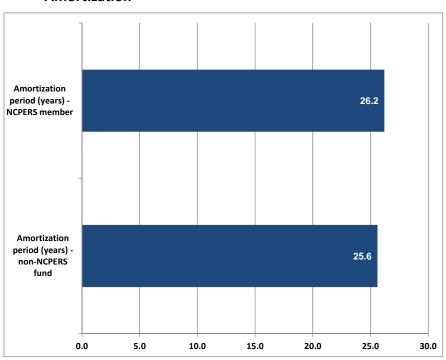
2014 Funded Level



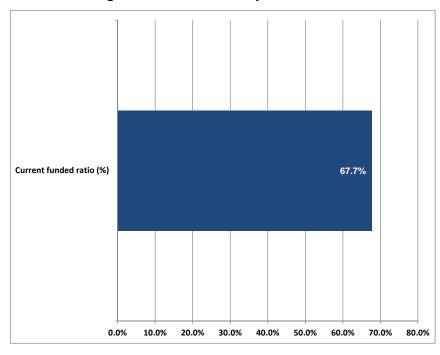
Pension funds are designed to pay off liabilities over a period of time which ensures longterm stability and makes annual budgeting easier through more predictable contribution levels.

For responding funds, that period of time averages to 25.9 years, up slightly from 25.4 years in 2013. The bottom graph shows the average amortization period for all responding funds based on whether or not they are a current NCPERS member.

Amortization

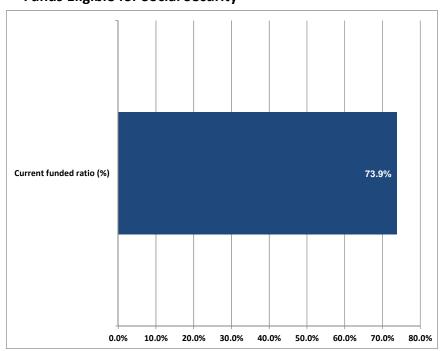


Funds Not Eligible for Social Security



Many funds include members who are not eligible to receive Social Security at the time of retirement. For this reason, such funds often have higher benefit levels to offset the loss of this source of retirement funding. Those funds that include such members report an average funded level of 67.7 percent, up from 66.4 percent in the 2013 study.

Funds Eligible for Social Security

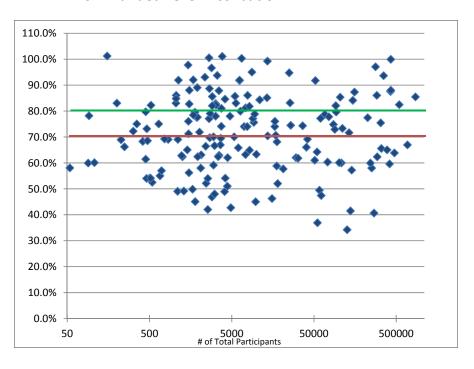


The graph to the left shows the funded level for those plans that include members who are eligible for Social Security. The average funded level for this group is 73.9 percent, up from 73.1 percent, in the 2013 study.

2014 Funded Level Distribution

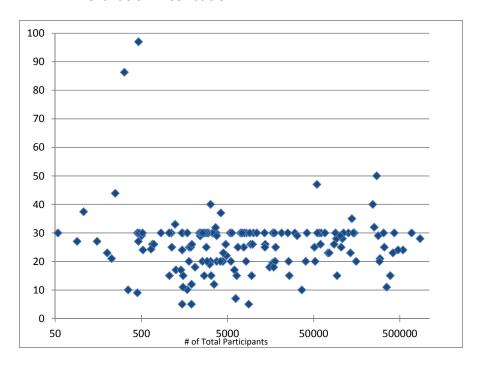
Based on responses to the 2014 study, average funded level for all responses is 71.5 percent. The graph at the top right shows the distribution of funded levels and fund size. The vertical axis shows level of funding, and the horizontal axis shows the size of the fund by total active and retired participants.

The green line denotes the 80-percent funding target identified by the Government Accountability Office, and the red line denotes the 70-percent funding target that Fitch Ratings considers to be adequate.



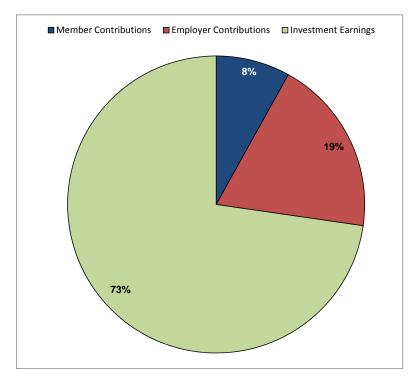
Amortization Distribution

The bottom graph shows amortization period for each responding fund. The vertical axis shows the amortization period (years), and the horizontal axis shows the size of the fund by total active and retired participants.



Sources of Funding

Overall Sources of Revenue



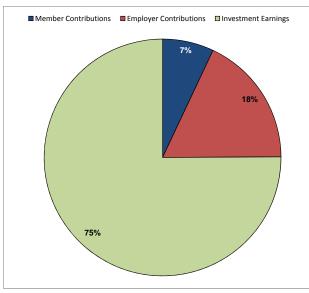
Income used to fund pension programs generally comes from three sources: member contributions, employer contributions and investment returns. The chart at the left shows the proportion of funding provided through each of these sources based on reported data.

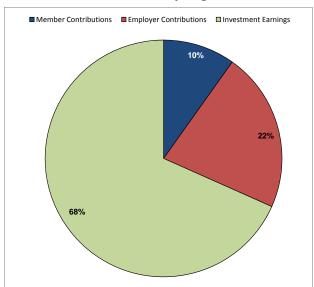
Investment returns are by far the most significant source of revenue (73 percent.) This is a four percent increase from 2013, as evidenced by the higher 1 year gross returns. Member contributions stayed consistent at 8 percent of fund income. Employer contributions equal approximately 19 percent, a four percent decrease from last year.

The findings in this study are consistent with other industry studies showing annual fund expenditures and economic impact significantly exceed the annual contributions made by the employers.

The chart below shows funds with members who are not eligible for Social Security reported higher member and employer contributions.

Social Security Eligible



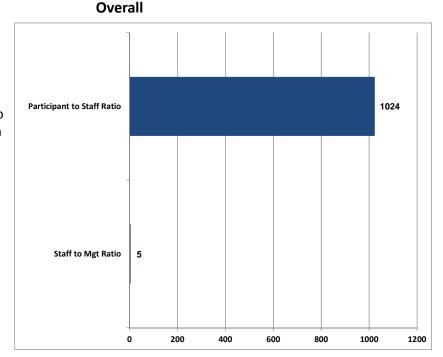


Fund Staffing

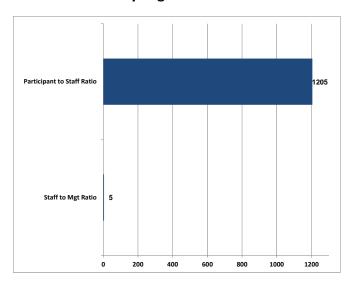
The average participant to staff ratio is 1024 to 1, down from 1042 to 1 in 2013. This shift can be attributed to a slight increase in the number of staff members who administer the fund.

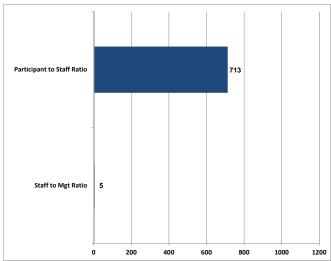
The ratio for Social Security eligible plans is 1206 to 1; non Social Security eligible plans have a participant to staff ratio of 718 to 1.

The average staff to management ratio is 5 to 1, down from 6 to 1 in 2013. Both Social Security and non Social Security eligible plans have ratios of 5 to 1.



Social Security Eligible





Reducing Liability

In the study, respondents were asked to share which strategies they have put in place to reduce unfunded accrued actuarial liabilities beyond traditional amortization. Below is a text cloud showing the words that appear most often in respondents' comments. Below the text cloud are the actual verbatim comments.



- Accelerated amortization for closed groups, bridge down future benefit accruals, increased employee cost sharing, hybrid plans
- Accelerated funding adopted January 2014; total appropriation scheduled to increase 10% per year for next 3 years, then 7% per year until fully amortized.
- Additional appropriations are being made by the employer to reduce the funding schedule.
- Additional contributions by State government above and beyond the ARC
- Additional contributions to plan from State government.
- An amendment to the Maine constitution approved in 1995 requires the State to fund the unfunded actuarial liabilities of the State/Teacher Program existing on June 30, 1996, over a period not to exceed 31 years beginning July 1, 1997, and not later than June 30, 2028. The amendment prohibits the creation of new unfunded liabilities in that Program except those arising from experiences loses, which must be funded over a period of not more than ten years. In addition, the amendment requires the use of actuarially sound current cost accounting, reinforcing existing statutory requirements.

- As part of our funding policy we are amortizing our UAAL on a closed 30-year period.
- Asset allocation changed to dampen volatility. Reinstitute employee contributions.
- ATRS has closed several "loopholes" in our laws that have a small impact if evaluated individually, but the implementation of all laws over time has worked to less the unfunded liabilities significantly.
- Benefit reductions have been implemented for going forward service as well as new hires into the plan.
- Board of Directors is formalizing
 "funding policy". It past two years, it has recommended and legislature approved contribution increases to improve funding position.
- Changed some assumptions
- Closing the amortization period.
- Eliminated ad-hoc COLAs and replaced with a bonus policy to be funded by plan sponsor
- Employee contributions have been increased for all employees. Plans providing less expensive benefits have been implemented for new employees.

- •Funding Rehabilitation Plan Adopted in 2010. Additional Stress Testing performed by Actuarial Consultant. Updated investment policy statement to reduce portfolio volatility.
- Implemented a 15-year layered amortization period, reduced assumed earnings rate, increased employer contributions
- Implemented a new tier of benefits with lower multiplier and longer service requirements; increased both member and employer contributions; COLA policy changed to only allowing a COLA to be granted when plans are funded over 100%, and will remain over 100% with a cushion after COLA is granted
- Implemented employee contributions

Reducing Liability - Continued

- Implemented Tier II plan provisions for members hired after August 28, 2014. As part of that agreement Kansas City (as the employer) will contribute 100% of the actuarial required contribution rate. Employee contributions also increased by 1% of pay to 11.55%.
- Implementation of statewide pension reform. Adoption of a strategic plan including a focus on long-term pension and health benefit sustainability.
- In 2012, comprehensive pension reform legislation was signed in Ohio that greatly improved long-term funding for OP&F. These changes have been implemented. Going forward, as required by Ohio law, if OP&F does not meet the required funding level, it will submit a plan to the state general assembly to meet this level.
- In discussion with Actuary & Goals & Objectives Committee to determine practices and procedures to implement to reduce unfunded accrued actuarial liability by changing future benefits.
- Increase EE contributions and then increase ER contributions by 2% a year over next 5 yrs. Look for additional onetime funding sources and possible dedicated fees from outside plan.
- Increase employer contributions.
- Increase employer/employee contributions; reduce employee service credit percentages; change the asset valuation method.
- Increase employer's responsibility to meet actuarial recommended contribution
- Increase funding, changes to asset allocation, reducing COLA
- Increased both employee and employer contribution rates
- Increased contribution rates, reduced and temporarily suspended COLAs
- Increased contributions
- Increased employee and employer contributions
- Increased employee and employer contributions by 7% over the last 5 years.
- Increased member and employer contribution rates; raised benefit age and service requirements; raised FAS period and vesting requirements
- Increasing contribution amounts for both EE and ER and normal retirement age and decreasing multiplier amount for new employees.

- Introduced reduced benefit tier for new employees. Suspended discretionary benefit increases. Increased contribution rates.
- N/A pay as you go plan
- No benefit increases. More Contributions. Lower some Benefits
- None
- None
- None. We will pursue traditional amortization.
- Our amortization period declines by one year each year.
- Our amortization period declines by one year each year.
- Our amortization periods declines by one year each year. Currently reviewing our funding mechanism for reform
- Our Legislature has made a series of benefit plan changes in 2009 and 2013. They have also been increasing member and state contributions over the last few years. We continue to educate them about the impact those changes have made, and where we still need to go in order to be an actuarially sound plan.
- Plan design change to a cash balance plans on and after 1/1/2015, increased employer contributions, increased employee contributions
- Planned DROP changes that would reduce DROP interest rate
- Public Act 98-599, signed by the Governor on December 5, 2013, provides a comprehensive change to the plan design. The main elements of the package include: • Reduction of the Automatic Annual Increase for current and future Tier 1 retirees • Automatic Annual Increase deferments for future Tier 1 retirees • Capping pensionable earnings for Tier 1 participants • Delaying the retirement age for current Tier 1 state workers under age 45 • Eliminating the use of sick and vacation days for service credit or pensionable earnings for future participants • Changes to the Effective Rate of Interest
- Changing the interest rate used for money purchase factors • Reduction of employee contributions (1%) for Tier 1 participants • Employer Funding enforcement • Increased funding formula plus supplemental payments

- (Continued from column 2) The option for 5% of present Tier 1 participants to join a new defined-contribution plan On May 14, 2014, the Illinois Circuit Court granted a temporary restraining order and a preliminary injunction stopping implementation of Public Act 98-599. Most of these changes will have an impact on reducing the unfunded liability. This survey was completed based on the plan before the legislation.
- Quarterly monitoring of cash flow requirements, which includes contributions, investment earnings, and pension distributions. Working group established to look at proposals to ensure adequate funding for each component affecting the pension benefit (including costs for acquisition of service credits)
- Reduce multiplier, lengthen service for new hires to access a non-reduced benefit, raise employer/employee contribution level, implement an Investment Strategy Document, adjust asset allocation, adding new investment classes
- Reduced accrual percentage, increased contributions, lengthened vesting period
- Review of Actuarial Assumption;
 Expansion of Allowable Investments within our Asset Allocation
- Sell nursing home. Set up financing policy to address unfunded liability
- Shorten amortization schedule, reduce assumed rate of return, increase contributions
- Shortening amortization period for benefit enhancements and increase employer contributions.
- Shortening the amortization period.

Reducing Liability - Continued

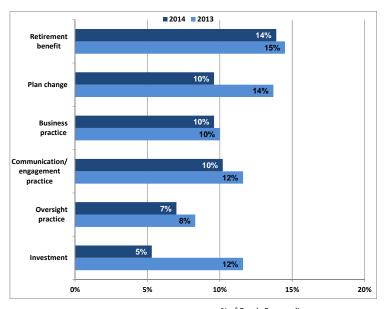
- Since fiscal 2002, the teacher's and employees' systems had operated under the "corridor funding method"—freezing employer contribution rates for both systems at their fiscal 2002 levels as long as the two systems remained actuarially funded between 90% and 110%. If the plans fell out of this corridor, the employer contributions were to be increased by one-fifth of the difference between the prior year's rate and the full funding rate for EPS and TPS. The employees' combined systems fell out of their corridor in fiscal 2005, followed by the teachers' combined systems in fiscal 2006. Over time, the level of underfunding prompted by the corridor system grew; exacerbating the system's declining funded status driven largely by poor investment performance. The General Assembly enacted legislation in 2013 to phase out the corridor funding method over 10 years and replace the system's current tiered amortization policy with a single 25-year closed amortization period.
- State law requires our trustees to certify state funding requirements under state law, but state law is not based on sound actuarial funding policies. Since 2012, the board has certified additional contributions that are based on actuarial standards as part of its strategy to educate policymakers.
- Stay the course. The long-term plan is still good. Watch markets carefully to maximize -- safely -- returns.
- Strong asset allocation policy implementation
- The 2013 Oregon Legislature reduced the COLA formula and removed tax remedy payments for non-residents, reducing the UAL by \$5 billion.
- The City has dedicated parking tax revenue to fund the pension.
- The Florida Legislature requires funding of the actuarially recommended UAL Rate.
- The Fund has no authority to implement a strategy to address the unfunded accrued actuarial liability.

- ■The MHSPRS Administrative Board adopted a revised funding policy in 2013 that positions MHSPRS to be at least 80 percent funded in 2042. This policy further provides for more stable contribution rates when expressed as a percentage of member payroll.
- The PERS Board of Trustees adopted a revised funding policy in 2012 that positions PERS to be at least 80 percent funded by 2042. This policy further provides for less volatility in the employer contribution rate, which gives our employers more stability in their budgeting process. PERS is currently on target to exceed the 2012 expectations with no increases in contribution rates or changes in economic assumptions.
- The reduction of future benefits and reduction of benefit formula. Increase of contribution rate and no longer refunding a portion of the employer match contributions.
- TMRS has a strict funding policy, which requires member cities to pay the actuarially required contribution rate. Member cities can also contribute an amount in excess of the required contribution. The TMRS Board of Trustees also made two decisions in 2014 that are important to the long-term stability of the system. First, the Board adopted new "generational" mortality tables that are used to determine annuity purchase rates and for assumptions used in the annual actuarial valuation. Second, the Board adopted the "Entry Age Normal" funding method.
- We are 95% actuarially funded and are on course to be 100% by 2016.
- We are asking Board approval to move from Normal Cost to Entry Age Normal Costing Method
- We believe we were very proactive years before many of our peers, when in 2004, with our funded position near 100%, we lowered the Plan multiplier from 2% times years of service to 1.5% times years of service new employees effective 9/1/04. It's ten years later now and more than half of the active workforce has transitioned into that lower-cost benefit tier.

- (continued from column 2) Then in July, 2011 we added another new tier of lower-cost benefits for new employees, primarily by raising the benefit age/service requirements. We have also not given any ad hoc COLAs in the last 12 years. We have also successfully raised contributions for five years in a row, beginning in 2010 through this year, 2014, which has affected both the employers and the employees.
- We have implemented closed amortization periods to ensure each year's UAL will be paid off within 25 years.
- We holding the contribution rates (when we could have decreased them) until we are 110% funded
- With the OPERS-recommended and Legislature-enactment of significant pension reform legislation that went into effect in 2013, OPERS is meeting its objective of reducing subsidized benefits. The strategy aligns benefits with funding sources. For example, service credit purchases for such time as military and elected official service must be purchases at 100 percent actuarial value.

Innovations

In the study, respondents were asked to share a success story regarding a best practice or innovation that other plans may like to learn about. Below is a text cloud showing those words that appear most often in respondents' comments. Below the text cloud are the actual verbatim comments. The categories the comments supported are profiled at the right.





- 1. Ongoing addition of self-service tools to our website has significantly reduced telephone calls to the System and processing of paper forms, thereby freeing up staff to perform other tasks that improve service to customers. 2. Use of videoconferencing technology for benefit consultations has significantly reduced staff travel and costs associated with same. Also means more people available for call center without having to increase staff.
- Active partnership with multiple employers to deal with GASB changes pro-actively.
- Annually conduct a Pre-Retirement

- Seminar for membership who is within 5 years of retirement. The seminar invites participation from spouses. Topics include pension benefits, retirement fundamentals, estate planning, QDRO information, social security benefits, insurance benefits and membership website.
- ATRS have had customized software developed on Open Source platforms that is saving the agency millions of dollars in annual software license fees. The customizations has worked well for our agency, and allows for changes to be made quickly and cost effectively.
- Becoming a more active shareholder.
 Investment & Pension Belief statement.
- Complete overhaul of plan investments to emphasize the importance of meeting actuarial assumed rate of return as opposed to an absolute return portfolio.
- Completed a comprehensive review and analysis of the Pension Plan in 2012-2013
- Educating employees about taking a withdrawal of their account if they are vested; explain deferred retirement.
- Engaged outside firm to manage disability application process

Innovations - Continued

- Firefighters requested the City of Austin to increase their contributions by 4% in lieu of same amount in pay raises, which they agreed to. In addition, firefighters increased their employee contributions by another 3%.
- Have implemented a proactive outreach education program to all stakeholders on the value and effectiveness of long term service to communities, as well as the immense economic impact and stabilization provided. We are pushing the message that retirement systems are truly effective SYSTEMS to enhance communities, not just employee benefit providers.
- Implementation of Asset Liability
 Management. Adoption of a set of Pension
 Beliefs and Investment Beliefs.
- Implementation of PROP
- Implemented bonus policy in lieu of ad-hoc COLAs
- In 2012 the Board approved using actuarial model "COLA Adjustment Policy" requiring amortization to be less than 30 and funded ratio to be 80%" before granting one.
- Member election where members approved by a super-majority to increase their contributions to strengthen the plan and improve the ad hoc COLA.
- Monitor risk, adjust to changes in market values. Insure contributions are timely deposited.
- New Hybrid plan for State employees and Teachers new hires after 7/1/2014. Plan contain costs and unfunded liability controls. Optional to local governments.
- Next Generation Investment Manager Program to diversity with small and minority or women owned investment firms
- Option A affirmation form. Making sure retiree knows the consequences of selecting Option A. (Beneficiaries receive nothing upon death)
- Our Annuity Dividends (ability to take them away) structure allowed us to spread the cost of the economy slump to annuitants. We came out quite strong
- Our success story is that we have consistently focused on "the three things" that a traditional defined benefit pension plan has to do to remain sustainable over the long-term, and those are:

 1) manage the plan assets, and 2) manage the plan's liabilities, and 3) collect in full every year the plan's ARC. Those "three things" have become our "mantra" as we never stop talking about them to all of our decision-makers, including our Board, the City Administration and the City Council.

- Performed a 30 year actuarial forecast analysis using various plan and economic scenarios.
- PERS adopted a records management system that requires all documents be imaged. This paperless system makes all records available via desktop and creates a much more efficient process.
- Policy to lower every year the benefit increase amortization years, until 15 years or lower and not use 25 years
- Require 100% funding level for benefit enhancements both before and after, using supplemental valuations
- The Illinois Municipal Retirement Fund has undertaken a journey to implement the Baldrige Criteria for Performance Excellence.
- The implementation of an employee portal which includes an extensive educational preretirement planning tool, which allows employees to track all sources of retirement income and to use actual payroll information to plot their retirement benefits from the Defined Benefit Pension. Employees say this is the most beneficial roll out the Plan has ever done; in addition the Plan host twice yearly Pre-Retirement Planning seminars with representatives from Social Security, Centers for Medicare, Estate Planning, Retiree Health, an inhouse experts. These session are typically full and valued by the employees.
- The OPERS Board of Trustees and staff have redesigned the health care program with a goal to provide access to sustainable health care coverage to our retirees within a four percent employer contribution rate target. We have begun to revise our health care funding framework and establish a stabilization fund that will complement the redesigned health care program. The stabilization fund will help minimize future health care changes for our retirees due to volatility in investment returns, inflation and payroll growth. These changes in total are expected to provide an increase in the solvency period from 10 years last year to an indefinite time period. Within the comprehensive strategy of planning and communicating these changes to OPERS members/retirees, OPERS has developed planning tools to address what we have termed "Milestone 2015 (MS 2015)." OPERS reviewed the data on how many members were eligible to retire prior to the effective date of pension legislation. It was projected that there would be an influx of retirements due to members wanting to retire ahead of the changes. This came to be known as "rush to the door." MS 2015 arose out of the fact that "rush to the door" implied that members were forced to retire. Just like members have a path toward
- their retirement, OPERS has a path toward meeting funding levels for pension benefits and improving the solvency of the health care fund. Along that internal path there are "milestones" that will be implement that must be addressed to achieve the established objectives. Now with the implementation of health care changes on the horizon, OPERS expects that certain members may decide to retire solely due to health care eligibility changes. However, that decision might not be the best decision for all members. Therefore, OPERS designed "Learn, Plan, Act," a section on its website designed to provide members eligible to retire prior to January 7, 2018 with planning tools necessary to make informed decisions about their retirement and health care coverage. The "Retirement Planner" allows members to estimate pension and health care costs utilizing different retirement dates. In addition, OPERS is utilizing all communications channels available to communicate with its members about the impending changes.
- This plan offers \$100 per month for every month of Alaska Guard Service if the member has 20 years of military service at least 5 of which is Alaska Guard time. This is a pay as you go plan funded by legislative appropriation from the State General Fund each year.
- TMRS is currently implementing "straight through processing" which will allow participating cities, members, and retirees to access, update, and/or change their plan / account information online.
- We are in the process of giving DROP participants web access to their DROP account activity. The application also works on mobile devices. Feedback has been very positive, however, it now requires our office to stay absolutely current on all DROP deposits and the posting of DROP interest.
- We are in the process of implementing auto enrollment for our 457 plan for new hires, with an automatic 3% deferral to help them save for their own retirement
- We contracted with an outside Audit Firm to conduct annual audits. This gives comfort to the governing body that the Retirement System is follow certain standards
- We developed a communications plan that reaches out to and educates all stakeholders, including members, retirees, employee and employer organizations, the state legislature, and the private sector on the current and future financial difficulties and possible solutions that will help the retirement system and its sustainability, while minimizing the impact on all stakeholders.

Innovations - Continued

- We have graduated to a virtually paperless environment whereby Board meetings are conducted on laptop computers, documents are received and stored electronically and virtually all member communications are disseminated through e-mail. We have found this to be more efficient and cost-effective and will be reducing staff from 2 1/2 employees down to 2 full-time employees by the end of the year. We have received favorable feedback from our members regarding the level of communication provided to them.
- We have significantly expanded our use of the website for self-service over the past several years and currently have over 50 percent of active and retired members registered for and regularly using the secure website to conduct business. This has resulted in fewer in-person transactions for staff, which has made us more cost effective overall

- We introduced a win-win DB DC Hybrid benefit structure for employees hired after 2-26-2012. The DB structure is competitive among our peers, City match is 5% of salary.
- We just migrated this year to a new software system that is a new recordkeeping system for the plan. Because the prior director did not communicate openly and forthrightly as to the progress and need for the new system, there was a lot of political backlash. We delayed implementation for a year while we went behind the scenes and gave County officials a better understanding as to the need for the system, as well as why various channels and pricing were chosen. We had to do a lot of work, but ultimately we were able to implement the new system. What it taught us is to always be open with these changes, since it causes a lot fewer headaches if everything is done above board, and in a politically savvy manner.
- We will be surveying our members for their input on which service expansion areas are their highest priorities as part of our decision on which improvements to do first.
- ■Working with our investment consultant, OP&F has implemented a new asset class consisting of Master Limited Partnerships.

Appendix A

In the study, respondents were asked to specify what "other" asset class they invested in. Below is a text cloud showing those words that appear most often in respondents' comments. Below the text cloud are the actual verbatim comments.



- Absolute 5; Alternative 3
- Absolute 5; Alternative 3
- Absolute return
- All alternatives
- All fixed income total
- Alternative fixed income
- Alternative Investments (includes real estate, venture capital, etc.)
- Alternative investments including real estate - these are targets, we have range for rebalancing
- Alternative=Private Equity + Hedge
 Fund + Real Estate
- Alternatives
- Alternatives
- Bank Loans 3.8; Public Real Assets 10.1; Private Real Assets 8
- Convertible Securities 4.4;
- Alternatives-Infrastructure 3.0

 Core plus fixed income = 18, Real assets
- = 16
- Covered calls
- Emerging markets equity
- Emerging markets, Timber
- Equity Long/Short
- Farmland and timber, opportunistic debt, private debt, opportunistic equity
- Fixed Income
- Fixed income 15.9, Real return 8.9, Absolute return 5.3
- Fixed income-14.9% (we don't break out by dom/int), Yield Driven-5.0%, Real Return-6.1%
- GAA and Risk Parity
- Global Asset Allocation
- Global Debt Securities 17%, Equity 50%, Private Equity 14%, Inflation Assets 4%, Real Assets 11%

- Global Equity
- Global Equity and Global Fixed Income
- Global Equity and Global Fixed Income
- Global Fixed Income
- Global tactical
- Global tactical
- Global Tactical Asset Allocation
- Global Tactical Asset Allocation (GTAA)
- GTAA
- GTAA & Credit
- Hedge Funds
- Inflation Protection
- Infrastructure
- Infrastructure
- Infrastructure
- Infrastructure .5,Natural Resources 1.4
 Global Tactical Asset allocation 7.9
- Infrastructure, timber
- Int'l Equity includes 13% of balanced funds
- Loans to Primary Government
- Master Limited Partnerships
- Miscellaneous categories
- MLP
- MLP
- MLP
- MLP/Energy
- MLPs
- Mortgages
- Opportunistic .5% and Real Assets 5%
- Opportunity Fund
- Overlay
- Private debt, Infrastructure, Natural resources
- Private Equity; Emerging Markets

- Public Equity 36.9; Debt Securities 21.9;
 Private Equity 21.8; Opportunity Portfolio
 1.2
- Public fixed income=22, Inflation protection=5.75, Multi-asset strategies=4.75, Public equities=46.3
- Real Assets
- Real return
- Real return
- Real Return (4); Covered Calls (5)
- Real Return/Opportunistic & Absolute Return
- Real Return/Opportunistic & Absolute Return
- Real Return/Opportunistic & Absolute Return
- Risk Parity
- Risk Parity
- Risk Parity 6.5, Master Limited Partnerships 3.9, Leverage -11.5
- Risk Parity, GTAA, Other Pension Assets and Liquidity
- Senior Secured Loans
- Specialty
- Stocks
- Strategic Investments
- Strategic lending
- Timber, emerging markets, Port Alpha Wind down
- Timber, MLPs
- Timberland
- TIPS
- US TIPS
- We are fully invested with the State Run PRIT Fund
- We have global oriented portfolio that doesn't above

Appendix B

2014 Study Instrument



NCPERS PUBLIC EMPLOYEE RETIREMENT SYSTEMS STUDY

Please share your feedback so we can continue to provide the most up-to-date information addressing retirement issues for public pension plans across the nation. You will need your most recently completed Comprehensive Annual Financial Report (CAFR) to complete these questions.

If you administer more than one plan, please copy this survey for each and note the name of the fund. If you are a multi-employer plan, you may use aggregate numbers from your CAFR and respond to the questions in the way that is generally applicable for most of the plans you administer. Your response will remain confidential and information regarding your fund will not be shared without your permission.

Plea	se enter your 5 digit ZIP code:				
Plan	name:				
	t type of plan is this? (Mark all that app Defined Benefit Plan (Traditional Pension Pla Defined Contribution Plan (Mandatory Retires	n) [Combination Plan		& Defined Contribution)
	ch retirement benefits below are offere individual items below if not applicable.	d or will be introduce	d by the plan or plan	n sponsors in the nex	t two years? Please
	ed Benefit Plan (traditional pension plan in w d on service and average wages)	hich the benefit is defin	ned by a formula		
	ed Contribution Plan (retirement account in ified and employee participation is generally		ntribution is		
	rred Compensation Plan (tax-deferred retiren , 401k; employee participation is voluntary)	nent savings account s	uch as a 457,		
Comi	bination Plan (blends Defined Benefit and De	efined Contribution elen	nents)		
Indivi	idual Retiree Health Savings Accounts				
In-se bene	rvice death benefit of at least the return of er fit	mployee contributions o	r a comparable		
Disab	oility benefit provided either within the plan, b	y Social Security or by	employer		
Plan	documents provide for vesting of plan benefi	ts			
Plan	documents prohibits involuntary forfeiture or	reduction of vested be	nefits		
An au	utomatic post-retirement adjustment of paym	ents (e.g. COLA)			
A cor	mpounding post-retirement adjustment of pay	ments (e.g. COLA)			
C 100 00 000	d hoc (not necessarily automatic or compour nents (e.g. COLA)	iding) post-retirement a	djustment of		
Empl	oyer pick up of employee contributions				
Defe	rred Retirement Option Plan (DROP - in all fo	oms)			
Quali	fied excess benefit plan (for payments above	e IRC 415 limits)			1 20
	h retirement plan changes below have bee ext two years? Please skip individual chang		ile.	implemented by the pla	an or plan sponsors in
			^	Years	was imprement at Next 1840 Years
Short	ten amortization period of unfunded liabilities				
Leng	then amortization period of unfunded liabilities	95			
Redu	ice multiplier				
Incre	ase multiplier				
Make	e benefit enhancements more difficult				
Leng	then smoothing period for actuarial value of	assets			
Short	ten smoothing period for actuarial value of as	sets			
Lowe	r the actuarial assumed rate of return				

plan or plan sponsors in the next two y		Already Implemented in Last.	Will implement in Next Two Year
		Two Years	
Hold the actuarial assumed rate of retu	irn at the same level		
Raise the actuarial assumed rate of re	tum		
Tighten retiree return-to-work rules			
Loosen retiree return-to-work rules			
Tighten the use of lump sum payouts i leave, or other paid time off)	n the final average compensation (sick leave, annual		
Tighten the use of overtime payments	in the final average compensation		
Raise benefit age/service requirement	5		
Reduce benefit age/service requireme	nts		
Increase employee contributions			
Reduce wage inflation assumption			11 2
Issue pension bonds to fund liabilities	. —	Ti -	
Freeze or close Defined Benefit Plan (specify helow)		
Jan Tanka Sina Albanda			
	our Defined Benefit Plan, which type of plan are you put		mark all that apply.)
Combination plan	Defined Contribution Plan	Annuity	
Cash balance plan	Deferred Compensation Plan (457, 403b, 401k, etc.)	Other	
6 Bt 12 5 40 11 12	e been implemented in the last two years or will be imple	mented by the plan of	pieri sperisors in are no
two years? Please skip individual item		Already Implemented in Last Two Years	Will Implement In Next Two Year
Conduct a death audit		Already Implemented in Last	
Conduct a death audit	s below if not conducted.	Already Implemented in Last	
Conduct a death audit Conduct an actuarial audit by a third p	arty actuary (includes replication of valuation and	Already Implemented in Last	
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Conduct a death audit Conduct an actuarial audit by a third popinion on actuarial assumptions) Conduct an information systems secur Conduct a building security audit Request an updated IRS Letter of Deta Update/strengthen an asset allocation Expand operational performance bence Update administrative software used for Provide online portal for members to a Conduct a member needs and expects Implement records management software Comply with new State statutory or responsed on a rate of return different from Which communications and member the plan or plan sponsors in the next to Develop public relations plan to address Expand retirement planning education Conduct a member satisfaction assess	arty actuary (includes replication of valuation and ity audit ermination study h marking or member data coess account information stions study are juliatory requirements to report your funded status if your assumed rate of return or engagement practices below have been implemented to years? Please skip individual practices below if not of the saffecting the fund for members	Already Implemented in Last Two Years	Will implement in Next Two Year

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Which oversight practices below have been implemented? Please skip individual practices below	low if not conducte	d.
	Ves	No
Receipt of the GFOA Award of Excellence for the most recent award cycle Receipt of an unqualified opinion from the auditor on the fund's financial statements.	H	
internal controls and compliance with applicable laws and regulations		
Conduct an actuarial valuation at least every 2 years		
Board adoption and adherence to written investment policies		
Board adoption of written fiduciary standards		
Receipt of annual investment performance evaluation from an outside independent investment review entity		
Use of a formal enterprise risk management framework		
Are you familiar with the GASB 68 changes on how you report retirement plan funding in your Comprehensive Annual Financial Report (CAFR)?		
Are you ready to communicate the GASB 68 changes to your governing body and		
community?	ш	
How satisfied are you with your readiness to address retirement trends and issues over the next	2 years? Use a 10	0 point scale where 1
means "Very Dissatisfied" and 10 means "Very Satisfied." Very Dissatisfied* 2 3 4 5 6 7	5	9 Very Satisfies
If you have an unfunded accrued actuarial liability, what strategies have you put in place to reduce	ce it beyond tradition	onal amortization?
	the same of	
Which categories best describe your innovation or best practice story above? (Please mark all the Retirement benefit Business practice Communication/ engagement practice Questions about your plan	hat apply_) Oversight pract Investment	ice
Retirement benefit Business practice Plan change Communication/ engagement practice	Oversight pract	_
Retirement benefit Business practice Plan change Communication/ engagement practice Questions about your plan Fund statistics from most recently completed fiscal year (if applicable). Please do not use con	Oversight pract	_
Retirement benefit Business practice Plan change Communication/ engagement practice Questions about your plan Fund statistics from most recently completed fiscal year (if applicable). Please do not use continue field - it is numeric only.	Oversight pract	_
Retirement benefit Business practice Plan change Communication/ engagement practice Questions about your plan Fund statistics from most recently completed fiscal year (if applicable). Please do not use contact the field - it is numeric only. Total number of active members: Total number of annuitants:	Oversight pract	_
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Page 3

Continued from page 3Fund statistics from most recently complete or percentage marks in the field - it is numeric only.	fiscal year (if applicable). Please do	
Does this plan require member contributions? Yes No		
Member contributions as % of payroll (%):		
Employer contributions as % of payroll (%):		
Investment manager expenses (basis points):		
Administrative expenses (basis points):		
Investment assumption/discount rate (%):		
Inflation assumption (%):		
Investment smoothing period (years):		
Amortization period (years):		4
Gross investment return % (1 year):		- 1
Gross investment return % (3 year):		
Gross investment return % (5 year):	10.0	
Gross investment return % (10 year):		
Gross investment return % (10 year):	to the following asset clas	sses?
Gross investment return % (10 year): Gross investment return % (20 year):	CONTRACTOR REST.	ses?
Gross investment return % (10 year): Gross investment return % (20 year): What is your approximate allocation	CONTRACTOR REST.	sses?
Gross investment return % (10 year): Gross investment return % (20 year): What is your approximate allocation What is your CURRENT allocation to the following asset classes? (Pen	CONTRACTOR REST.	ises?
Gross investment return % (10 year): Gross investment return % (20 year): What is your approximate allocation What is your CURRENT allocation to the following asset classes? (Pendomestic Equity (%):	CONTRACTOR REST.	ses?
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Gross investment return % (10 year): What is your approximate allocation What is your CURRENT allocation to the following asset classes? (Pen Domestic Equity (%): International Equity (%): International Fixed Income (%): International Fixed Income (%): High Yield Bond (%): Real Estate (%): Private Equity/Hedge Fund/Alternative (%):	CONTRACTOR REST.	sses?

3. W	What is your TARGET allocation	to the following asset classes? (Percentages should equal	100%):
D	omestic Equity (%):			
In	nternational Equity (%):			
D	Oomestic Fixed Income (%):			
In	nternational Fixed Income (%):			
н	ligh Yield Bond (%):			
R	Real Estate (%):			
P	rivate Equity/Hedge Fund/Altern	ative (%):		
C	Commodities (%):			
C	Cash Equivalents (%):			
0	Other (specify asset class below)	(%):		
	Questio	ons about your fund (y	our responses will	be confidential)
4. W	What type of employees/beneficial			
E	Township	County	State	Other
L	City/village	Police/fire	Educational	
5. A	re your members eligible for So Yes	ial Security coverage?		
6. A	are your members eligible for Me			
L	Yes	∐ No	200	
7. D	lo you include overtime in the ca Yes	No	it? Not applicable	
a. D	loes your plan provide retiree he	alth benefits?		
). W	Which role do you serve on the B Board chair Board	oard? (Please mark all that ap I secretary Appointment plan sponsor		Selected by other Staff trustees
. M	May we contact you if we have ac	Iditional questions?		
i. w	Vould you like to receive a copy Yes	of the report when it is released	in November?	
	This co	ncludes the study. Tha	ank you for your tin	ne and cooperation.

For more information:

National Conference on Public Employee Retirement Systems (NCPERS) 444 N. Capitol St., NW Suite 630 Washington, D.C. 20001 Tel: 1-877-202-5706